

## AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims:

### Listing of Claims:

1. (Currently Amended) A method of ~~generating a graphical user interface (GUI), the method~~ comprising:
  - grouping graphical user interface objects into object groups;
  - defining an arrangement for a plurality of the object groups, each object group corresponding to at least one relationship in the arrangement, the arrangement corresponding to a hierarchy among the object groups to provide the at least one relationship, the at least one relationship comprising at least one of an overlapping relationship, a disjoint relationship, a one-to-one relationship, and an n-to-one relationship;
  - assigning a graphic pattern to each of the at least one relationship, the graphic pattern assigned to that is distinct for each relationship being distinct from the graphic patterns assigned to each other relationship in the arrangement;
  - ~~defining~~ generating a graphical structure for each object to be represented in the GUI;
  - ~~defining~~ generating a background region for the GUI for each object group based on the assigned graphic pattern assigned to for the corresponding at least one relationship corresponding to for the object group; and
  - generating the graphical user interface, the graphical user interface GUI comprising:
    - a first at least two of the background regions that are concurrently displayed in the graphical user interface and that do not overlap with each other, non-overlapping each of the first two of the background regions comprising each including one or more related graphical structures representing related objects; and

a second at least two of the background regions that are concurrently displayed in the graphical user interface and that do overlap with each other, overlapping each of the second two of the background regions, the overlapping background regions lacking a border that comprises ~~comprising~~ a distinct graphical pattern differing from the graphic pattern assigned to the background region, the border between the overlapping background regions such that a visual transition between the overlapping background regions is defined by a change ~~from between the an assigned~~ graphic patterns assigned to each pattern of one of the second two of the overlapping background regions to an assigned graphic pattern of the other background region.

2. (Original) The method in accordance with claim 1, further comprising displaying the GUI.

3. (Currently Amended) The method in accordance with claim 1, wherein at least one a graphic pattern represents a color to be displayed in one of the a background regions ~~region~~.

4. (Original) The method in accordance with claim 3, wherein each relationship in the arrangement is assigned a different color.

5. (Original) The method in accordance with claim 4, wherein the different color is progressively lighter or darker according to the significance of the relationship in the arrangement.

6. (Currently Amended) The method in accordance with claim 1, wherein at least one a graphic pattern represents a shading pattern to be displayed in one of the a background regions ~~region~~.

7. (Original) The method in accordance with claim 6, wherein the shading pattern includes a plurality of lines.

8. (Original) The method in accordance with claim 6, wherein the shading pattern includes a color.

9. (Original) The method in accordance with claim 1, wherein at least one graphical structure is selectable by a user of the GUI for interaction.

10. (Currently Amended) The method in accordance with claim 1, wherein ~~the arrangement is a hierarchy and~~ each relationship in the hierarchy is a level in the hierarchy.

11. (Currently Amended) An apparatus comprising:  
at least one of a processor and a memory configured to provide a method comprising:  
grouping graphical user interface objects into object groups;  
defining an arrangement for a plurality of the object groups, each object group corresponding to at least one relationship in the arrangement, the arrangement corresponding to a hierarchy among the object groups to provide the at least one relationship, the at least one relationship comprising at least one of an overlapping relationship, a disjoint relationship, a one-to-one relationship, and an n-to-one relationship;

assigning a graphic pattern to each of the at least one relationship, the graphic pattern assigned to that is distinct for each relationship being distinct from the graphic patterns assigned to each other relationship in the arrangement;

defining generating a graphical structure for each object to be represented in the GUI;

~~defining generating~~ a background region ~~for the GUI~~ for each object group based on the assigned graphic pattern ~~assigned to for the corresponding~~ at least one relationship corresponding to ~~for the object group; and~~

generating the graphical user interface, the graphical user interface GUI comprising:

a first at least two of the background regions that are concurrently displayed in the graphical user interface and that do not overlap with each other, non-overlapping each of the first two of the background regions comprising each including one or more ~~related~~ graphical structures representing related objects; and

a second at least two of the background regions that are concurrently displayed in the graphical user interface and that do overlap with each other, overlapping each of the second two of the background regions, the overlapping background regions lacking a border that comprises comprising a distinct graphical pattern differing from the graphic pattern assigned to the background region, the border between the overlapping background regions such that a visual transition between the overlapping background regions is defined by a change ~~from between the an assigned graphic patterns assigned to each pattern of one of the second two of the overlapping background regions to an assigned graphic pattern of the other background region.~~

12. (Currently Amended) The apparatus in accordance with claim 11, wherein at least one a graphic pattern represents a color to be displayed in one of the a background regions region.

13. (Previously Presented) The apparatus in accordance with claim 12, wherein each relationship in the arrangement is assigned a different color.

14. (Previously Presented) The apparatus in accordance with claim 13, wherein the different color is progressively lighter or darker according to the significance of the relationship in the arrangement.

15. (Currently Amended) The apparatus in accordance with claim 11, wherein at least one a graphic pattern represents a shading pattern displayed in one of the a background regions region.

16. (Previously Presented) The apparatus in accordance with claim 15, wherein the shading pattern includes a plurality of lines.

17. (Previously Presented) The apparatus in accordance with claim 15, wherein the shading pattern includes a color.

18. (Previously Presented) The apparatus in accordance with claim 11, wherein at least one graphical structure is selectable by a user of the GUI for interaction.

19. (Currently Amended) The apparatus in accordance with claim 11, wherein each relationship in the arrangement is a level in the a hierarchy ~~and the arrangement is a hierarchy.~~

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (New) The method in accordance with claim 1, wherein the graphic patterns of the first two of the background regions are related to denote the relationship between the first two of the background regions in the hierarchy.

25. (New) A computer program product, tangibly embodied on a computer-readable storage medium, the computer program product comprising instructions that, when executed by a processor, cause the processor to perform operations comprising:

grouping a set of data objects into a plurality of object groups that comprises a first object group, a second object group, and a third object group;

defining a hierarchical arrangement for the plurality of object groups, the hierarchical arrangement comprising defined relationships between the first object group, the second object group, and the third object group and a plurality of levels to which the data objects in the set of data objects are assigned, the defined relationships comprising at least one of an overlapping relationship, a disjoint relationship, a one-to-one relationship, and an n-to-one relationship;

assigning graphic patterns to each of the defined relationships, the graphic patterns reflecting levels in the hierarchy;

generating a graphical structure for each data object in the set of data objects;

generating a plurality of background regions, each of the background regions having one of the graphic patterns to correspond to one of the levels of the hierarchy;

generating a graphical user interface that comprises the graphical structures and the background regions with the graphical structures arranged in the background regions to reflect the levels of the hierarchy to which the data objects belong and the object group of the plurality of object groups that comprises each data object.